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UNITED STATES OF AMERICA
AGENCY FOR INTERNATIONAL DEVELOPMENT
OFFICE OF REGIONAL INSPECTOR GENERAL

Report No. 6-294-00-001-P
December 12, 1999

MEMORANDUM

TO: DIRECTOR, USAID/West Bank and Gaza, Larry Garber

FROM: RIG/Cairo, Darryl T. Burris

SUBJECT: Audit of Change Orders Under USAID/West Bank and Gaza's Construction Contracts for Water Activities in the West Bank

Enclosed is our final report on the subject audit. The report contains three recommendations for strengthening controls over construction contract change orders. In finalizing the report we considered your comments and recommendations on the draft report. The Mission's comments, and our evaluation of those comments, are summarized on page 11. The Mission's comments are also presented in their entirety in Appendix II. Based upon the comments to the draft report, we consider that final action has been taken on each recommendation.

I appreciate the excellent cooperation and courtesies your office extended to my staff during the audit.

Enclosure: a/s

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EXECUTIVE SUMMARY

About 70 percent of USAID/West Bank and Gaza's program budget is applied to its Strategic Objective 2 which deals with water and wastewater activities in the West Bank and the Gaza Strip. For the most part, these activities are implemented through contracts. At the time of our audit, the contracts implemented under the first phase of the Mission's water program were in the construction phase while contracts for the second and third phases were just beginning.

The audit assessed whether the Mission's monitoring of construction change orders under its contract for first phase water activities in the West Bank provided reasonable assurance that the change orders were necessary and reasonably priced. Contracts in the Gaza Strip were not reviewed due to security considerations at the time of planned fieldwork.

The audit concluded that USAID/West Bank and Gaza's monitoring of change orders did provide reasonable assurance that the change orders were necessary. However, the audit revealed a control issue regarding work of a discretionary nature being done without first obtaining approval from the contracting office. The technical office did not discourage this practice. We considered that the technical office's lack of disagreement might be interpreted as an informal commitment by USAID to pay—which could have contractual and funds control implications. Hence we recommend that the Mission make clear to construction managers and construction contractors that the Mission will not pay for additional work unless it has been approved in advance by the contracting officer. (See Recommendation No. 1.)

The audit also found one case of a change order submitted for additional work that a subcontractor had previously agreed in writing to do at no charge, in return for a decision to select the least cost option to correct a mistake the subcontractor had made. While the parties, including the subcontractor and the prime contractor, agreed with the arrangement at the time, later, under another change order, the same subcontractor threatened a claim against the prime contractor. To get the subcontractor to drop its claim, the prime contractor supported the subcontractor's submission for the costs of the additional work not charged under the earlier change order. Essentially, the prime contractor avoided a claim against itself by supporting further charges to USAID.

Although we briefed the contracting officer on this resubmitted change order, he subsequently approved it, apparently under the premise that the work was "tacitly endorsed" by the Mission

and therefore the Mission was obligated to pay. Since the contracting officer has already approved the resubmitted change order, we are not making a recommendation to disapprove it. We recommend, however, that the Mission require the construction manager to state in its negotiation memorandums the specific rationale and contractual basis for why it considers a submitted change order to be USAID's responsibility. (See Recommendation No. 2.)

As regards pricing, the audit concluded that the Mission's monitoring of change orders did not provide reasonable assurance that change orders were reasonably priced; however, the Mission had recently arranged for temporary assistance from the Army Corps of Engineers to help it address this area. Up to that point, the Mission's procedure for assuring the reasonableness of change order pricing had basically been to rely upon the construction manager's work with limited monitoring of the details. The audit found multiple pricing questions and issues that merited further Mission attention and investigation (see Appendix III). To assist the Mission in investigating the pricing issues noted in the audit, we provided our audit workpapers to the Army Corps of Engineers personnel. Longer term, however, we recommend that the Mission assign sufficient contracting office staff to continuously monitor construction contracts. Further, we recommend that the Mission require construction managers to: (1) obtain basic information at the start of the construction contracts that will be needed later to evaluate the reasonableness of change order pricing, and (2) require construction managers to institute procedures that will make it easier for the Mission to monitor the construction managers' work. (See Recommendation No. 3.)

The Mission agreed with the audit recommendations and has already taken action to implement them. The Mission was concerned, however, that the second audit finding might mislead a reader into believing that the Mission paid for the work required to fix the subcontractor's mistake. We consider that the finding clearly shows that the Mission did not pay for the work required to fix the subcontractor's mistake. Rather the issue concerns the Mission's payment for additional work beyond what was required to fix the subcontractor's mistake—which additional work the subcontractor had agreed in writing to do at no additional charge if a decision was made to allow the subcontractor to fix its mistake using the least cost option of two options being considered.

A summary of management's comments and our evaluation is presented on page 11. The full text of the Mission's comments is included in Appendix II.

Office of Inspector General

Office of Inspector General
December 12, 1999

INTRODUCTION

Background

USAID/West Bank and Gaza's main strategic objective deals with water and wastewater activities. Planning documents for 1998 showed that from FY 1996 to FY 2000 the Mission planned to commit $265 million, 70 percent of its program resources, to its Strategic Objective No. 2: Greater Access to and More Effective Use of Scarce Water Resources.[1]

The audit reviewed the Mission's procedures for monitoring construction change orders under its contract for first phase water activities in the West Bank. At the time of our audit the second and third phases of the Mission's water program were just beginning but as yet there were no construction activities related to water.

In June 1996, USAID awarded Camp Dresser and McKee International, Inc. (CDM) a $46.6 million contract to implement the major activities under the Mission's first phase water program in the West Bank. In addition to other project management responsibilities, CDM was to design, procure and manage the construction of certain water works. The major construction activities were a water transmission system and 4 production wells to serve the Hebron-Bethlehem area, and a water transmission system to serve 11 villages near the city of Jenin. CDM did the design work and subcontracted with The Morganti Group, Inc. (hereinafter referred to as the construction manager) to award and oversee subcontracts for the actual construction. The construction manager awarded four subcontracts to first-tier construction subcontractors. Three of the four first-tier construction subcontractors further subcontracted major portions of their work to local firms. Appendix IV shows the contract hierarchy for these West Bank contracts.

The first-tier construction subcontracts were awarded between December 1997 and April 1998 and were to be completed between December 1998 and May 1999. However, subcontract schedules had slipped from three to six months so that the last of the works was not expected to be completed until December 1999.

As of our March 29, 1999 audit cutoff date, the CDM contract had been amended 17 times raising its value to $71.7 million. Construction subcontracts for water activities within that amount totaled $50.6 million, which included value-added taxes but not other change orders. As of March 29, 1999, under these subcontracts the construction manager had logged a total of

[1] The cited figures are for the Mission as a whole, which includes activities in both the West Bank and the Gaza Strip.

66[2] change orders which were in various stages of processing, including five that the Mission had already approved. Only 56 of the 66 change orders were accompanied by cost estimates of the change order cost. The estimated cost was $6.2 million.

Since the construction manager told us that additional change orders are in the pipeline, the number of change orders logged by the construction manager as of our audit cut off date does not represent the total number of change orders that will ultimately be proposed.

Audit Objective

The Office of Regional Inspector General/Cairo conducted an audit of USAID/West Bank and Gaza's contract for its first phase water activities in the West Bank to answer the following audit objective:

> **Did USAID/West Bank and Gaza monitor change orders under its construction contracts for water activities in the West Bank to provide reasonable assurance that the change orders were necessary and reasonably priced?**

Appendix I describes the audit's scope and methodology.

[2] Four change orders for value-added taxes are not included in this count as they did not involve construction per se and their amount is included in the previously mentioned subcontracts amount.

REPORT OF AUDIT FINDINGS

Did USAID/West Bank and Gaza monitor change orders under its construction contracts for water activities in the West Bank to provide reasonable assurance that the change orders were necessary and reasonably priced?

USAID/West Bank and Gaza monitored change orders to provide reasonable assurance that they were necessary. However, there was one control issue, and one change order that we did not consider necessary. In regard to pricing, the Mission's monitoring of change orders did not provide reasonable assurance that change orders were reasonably priced although the Mission recently arranged for temporary assistance to address this area.

In examining whether change orders were necessary, we noted a control issue concerning discretionary change order work proceeding without prior approval by the Mission's contracting officer. Furthermore, we found one change order submitted for work a subcontractor had previously agreed to do at no charge. The no-charge work had been offered in return for a favorable decision regarding the least cost option to fix a mistake made by the subcontractor.

When determining whether change orders were reasonably priced, we found that the Mission's technical office relied on the construction manager to negotiate change order costs and did limited review of the detailed supporting documentation. Further, the contracting office, which the Mission indicated was understaffed, largely relied on the technical office's recommendation and did only a limited review of change order pricing. As a result, there was significant risk that the Mission would approve questionable change order pricing without being aware that it had done so. However, the Mission's contracting office subsequently arranged for assistance from the Army Corps of Engineers in processing the backlog of change orders which seems to have temporarily mitigated the price risk.

Avoiding Unauthorized Commitments

Only contracting officers are authorized to enter into contracts on behalf of the U. S. government. In reviewing change order files, we noted a significant number of instances where change order work of a discretionary nature was done without obtaining contracting officer approval. In the typical situation, the Palestinian Water Authority (PWA) had indicated that it wanted the additional work done. The construction manager took upon itself to direct that the work be done, while keeping the USAID technical office informed of what it was doing. The construction manager and subcontractors involved worked under the assumption that USAID would pay since the PWA wanted the work and the USAID technical office had been kept informed throughout the process and did not object. However, the technical office has no authority to approve additional contract work. Furthermore, the contractors involved might interpret the technical office's lack of disagreement with the additional work as an informal USAID commitment to pay for the work, which could have contractual and funds control implications.

> **Recommendation No. 1: We recommend that USAID/West Bank and Gaza, for the next round of construction under its water program, make clear to all construction managers and construction contractors involved that USAID will not pay for additional work unless the contracting officer requests the work in advance.**

The Federal Acquisition Regulation (FAR) states that only contracting officers may be enter into contracts on behalf of the U.S. government. Within certain limits explained in FAR, an unauthorized commitment (i.e., an agreement that is not binding solely because the government representative who made it lacked the authority to enter into the agreement on behalf of the government) may be ratified by the Agency. However, it is clearly the intent of FAR to discourage such unauthorized commitments.

The audit noted that change orders under the Mission's West Bank water program came about due to a variety of reasons, many beyond anyone's control to avoid. Among the reasons noted for change orders were the following:

- To accommodate requests from the PWA or municipalities along the route of the construction for design changes, additional work and alternate pipeline routings;

- Schedule delays due to landowner protests, denial of access to the work site by the Israeli Defense Forces, or the site not being available for work at the agreed upon date due to lack of permits or another contractor still working at the site;

- Site conditions changed from the original bid condition or not anticipated in the original bid; and

- Value engineering changes.

However, there were a number of change orders, generally additional work requested by the PWA or municipalities along the route of the water works, which we considered discretionary. For these discretionary additions to the contract scope, contracting officer approval should have been obtained before the work was started or costs incurred. However, the files did not indicate that this always happened.

For example, in the subcontract for the water transmission system between Hebron and Bethlehem the audit reviewed in detail nine change orders (from earlier in the subcontract period) with estimated costs of about $597,000.[3] This included five change orders for discretionary work that had estimated costs of about $285,000. In only one case was the contracting officer's approval (for up to $50,000) obtained in advance.

An example of a change order for discretionary work that was not pre-approved by the contracting officer was additional work to lay both a German-funded water transmission line and the USAID line in the same trench where the two lines passed through two municipalities. The work was agreed to at a meeting between one of the municipalities, the PWA, the construction manager and the construction subcontractor. Work in the first municipality was completed over a two-month period and the construction manager was ready to direct the work to begin in the second municipality when the prime contractor noted that although everyone involved, including USAID, agreed with the technical merits of a dual-pipe trench, no one from USAID had come forward to commit the additional funds required. The prime contractor was concerned about doing additional work in the second municipality because the head of the USAID technical office had stated emphatically that USAID was not going to pay for the dual-pipe trench in the first municipality because it felt the cost was unjustified.

The subcontractor's representative stated that they did the work in advance of the contracting officer's approval in order to maintain the subcontract work schedule. Furthermore, he stated that USAID technical representatives had attended weekly progress meetings where the work was discussed, and that they knew what was going on.

Our point of bringing up the lack of contracting officer approvals is not necessarily to question whether USAID should ultimately pay for the costs of these change orders. Rather, we question the control aspect of permitting costs to be incurred without making the financial arrangements to pay for the work (funds control considerations) and the possibility that the technical office's lack of disagreement might be interpreted as a commitment by the U.S. government to pay for the work. This could present legal problems should USAID decide it should not pay.

[3] For purposes of this discussion we excluded two further change orders that we also reviewed in detail, but that either did not involve construction or reduced rather than increased costs.

Change Order Approved for Work that the Subcontractor Previously Agreed to Do at No Additional Charge

The Mission should not pay for additional work that was covered for payment under a previous agreement. However, the audit noted one such case where a subcontractor had previously agreed to do additional work requested by the Palestinian Water Authority (PWA) at no charge in return for a decision to select the least cost option to correct a mistake the subcontractor had made. The change order, which was originally submitted without charge to USAID, was later revised and resubmitted to USAID for payment. The resubmission was the result of an agreement among the prime contractor, construction manager, and subcontractor under a later change order for the subcontractor to drop a threatened claim against the prime contractor. In return, the prime contractor agreed to support the subcontractor to resubmit to USAID for the cost of the additional work under the earlier change order.

> **Recommendation No. 2: We recommend that USAID/West Bank and Gaza, for the next round of construction contracts under its water program, require construction managers to document in change order negotiation memorandums the specific contractual basis for why the change order costs are USAID's responsibility rather than the involved contractors or other parties.**

While there are many considerations that the Mission must take into account in deciding whether to pay for a change order, a basic one is whether someone else already agreed to pay for the work. In the case of change order number one under the subcontract for the Hebron-Bethlehem water transmission system, the technical officer told us that the matter was agreed to without requesting USAID to consider funding the work.

Change order file documentation indicates that in early December 1997, before the subcontractor began construction, the PWA proposed certain additional work to the prime contractor and the construction manager. In order to accommodate a planned Ministry of Housing housing subdivision below the Bethlehem reservoir, the PWA wanted the USAID pipeline rerouted around the edge of the property and an existing Bethlehem Water Service and Sewage Authority (WSSA) pipeline to be dug up and re-laid alongside the USAID line.

USAID was informed of this request and asked the PWA to formally present the request to USAID so that the complexity and cost of the work could be evaluated. PWA never did this, possibly as a result of subsequent events.

In early January 1998, the subcontractor began excavating the Bethlehem reservoir site and immediately made a serious mistake—it over-excavated by two meters. Half the site had been excavated before the subcontractor realized its error. The subcontractor was then faced with either excavating the remainder of the site to the same level, or backfilling the over-excavated part with concrete. Further excavation was by far the less expensive option. Therefore, the subcontractor proposed to lower the reservoir's elevation. The change order file indicates that the subcontractor proposed to relocate the WSSA line at no additional cost if the prime contractor

agreed to lower the reservoir by two meters.

The subcontractor's proposal was considered by a committee consisting of representatives from USAID, PWA, the prime contractor, and the construction manager. It was found to be acceptable, assuming an analysis of the hydraulic effects bore out no significant effect. PWA then wrote a letter of no-objection to reducing the reservoir's elevation contingent on the subcontractor relocating the WSSA line at no additional charge. The subcontractor agreed in writing to shoulder the cost of the work requested by PWA and the rerouting of the USAID pipeline.

Subsequently, however, an impasse developed between the subcontractor and the prime contractor regarding responsibility for part of the costs under a different change order.[4] The subcontractor stated its intention to pursue a claim against the prime contractor.

The prime contractor then reviewed the originally submitted change order number one and determined that it conflicted with the subcontractor's contract. The prime contractor concluded that the change order as originally submitted assumed a hypothetical obligation on the part of the subcontractor to fill in the over-excavation to correct its error. The prime contractor noted that while the subcontractor was responsible for correcting its error, the subcontractor was only obligated to bear the cost of doing the further excavation—not the extra work beyond that which it had originally agreed to do.

Shortly after this, the construction manager submitted a revised change order number one for payment by USAID[5] and the subcontractor agreed to withdraw its intention to pursue a claim under the other change order.

Although the subcontractor did the extra work requested by PWA, we disagree that USAID had a responsibility to pay for that work. The subcontractor proposed doing the work at no charge in return for a favorable decision to reduce the elevation of the Bethlehem reservoir. That favorable decision was made by the parties mentioned above. However, PWA, the beneficiary of the constructed works, conditioned its approval on the subcontractor doing the extra work at no additional charge. The subcontractor agreed ***in writing***. Hence, we consider that the two most interested parties involved in this agreement—PWA and the subcontractor—each received what they requested and the matter should have been considered settled.

We briefed the contracting officer on this issue, arguing against approval. However, he ultimately decided to approve the resubmitted change order apparently under the premise that the work was "tacitly endorsed" by the Mission and therefore the Mission was obligated to pay. Since the contracting officer's decision binds the government, we are not making a

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[4] The file indicates that the construction manager had negotiated the disputed costs down to $64,701. However, this was an issue between the two contractors and not the responsibility of USAID.

[5] The revised change order amount was $86,063 versus a net of $0 as originally submitted. The difference is due to including the value of the extra work that the subcontractor had previously agreed to do at no charge.

recommendation to disapprove the change order. But we do recommend that future negotiation memorandums include the specific rationale and contractual basis for why the submitted change order costs are USAID's responsibility rather than the responsibility of others.

Closer Monitoring of Change Order Pricing Needed

Contracting officers are responsible for purchasing supplies and services at fair and reasonable prices. In evaluating the Mission's monitoring of change orders, we noted that the Mission relied heavily on the construction manager to negotiate reasonable prices for change orders and did limited monitoring of the details. The basic causes for limited Mission monitoring were the technical office's belief that it could rely on the construction manager's work without getting into the details of the pricing, and the contracting office's overloaded work schedule which prevented it from monitoring pricing more closely. While the construction manager did negotiate down most change order prices submitted by subcontractors, there were a variety of related issues that indicated the need for closer Mission monitoring of pricing.

Recommendation No. 3: We recommend that USAID/West Bank and Gaza, for construction contracts under its second and third phase water program, develop and implement an improved system for monitoring change order pricing. At a minimum, the improved system should consider:

3.1 Assigning contracting office staff on a continuous basis to monitor construction contracts/subcontracts, their associated change orders, and construction managers' procedures for negotiating change order prices.

3.2 Requiring construction managers to obtain, at the beginning of the contracts/subcontracts, basic information and supporting documentation needed for subsequent evaluation of the reasonableness of change order pricing (such information would include the fixed unit prices negotiated by the construction contractor for subcontracted work, and compensation levels by individual core staff, actual equipment costs, and overhead costs, for the construction contractor and its major subcontractors).

3.3 Requiring construction managers to: (i) fully index, with the supporting detail attached, the final version of negotiated change orders, (ii) obtain evidence from the construction contractors of the amounts negotiated or paid to lower tier subcontractors for work done on individual change orders, and (iii) maintain an organized database of local market prices that the Mission can check against to assess the reasonableness of unit prices.

The Federal Acquisition Regulation (FAR) states that contracting officers are responsible for purchasing supplies and services at fair and reasonable prices and that they should use data on

costs and pricing to evaluate proposed prices for construction.

For change orders under West Bank construction subcontracts, we noted that the Mission basically relied on the construction manager to negotiate fair prices, with limited Mission review of the details. The monitoring done by the Mission was split between the Mission's technical and contracting offices. However, the technical office basically relied on the work of the construction manager without detailed review of pricing support, and the contracting office relied on the review done by the technical office.

At one point, the Mission's technical officer stated that cost control was part of the construction manager's responsibility and that when the construction manager submits a negotiated change order it provides backup which proves the costs are fair and reasonable.[6] For the first change orders approved by the Mission's contracting officer, the contracting office required the technical officer to certify that the prices of the submitted change orders were reasonable. However, the technical officer told us that he was never in a position to make such a certification.

Our assessment of the reasonableness of change order prices found that, in general, the construction manager was doing a good job in negotiating down the prices of change orders. We saw evidence of this in the difference between the prices of originally submitted change orders and the final negotiated prices.

The construction manager's procedures involved first determining the number of work units and then negotiating the unit prices. The construction manager indicated that it uses unit prices for similar work in the subcontractors' fixed priced contracts, negotiated prices in earlier change orders, pro forma invoices for material items, and local market prices. Although we could not verify that the construction manager checked local market prices because it did not maintain an organized database of such prices, in general, the procedures described to us seemed reasonable.

However, upon closer analysis we noted multiple pricing questions/issues that merited further Mission attention and investigation. For example, for a number of change orders we were not able to verify the actual amounts paid by the subcontractor, even though the work had been done before the change order was finally negotiated. In such cases, we would expect the construction manager to verify how much the subcontractor actually paid for the work to assure that subcontractor does not profit unreasonably. On certain change orders we were not able to trace back to the source of the unit prices for some or most of the items to assess whether they were reasonable. Certain items of cost, such as overheads and actual labor and equipment costs for schedule delays, were not supported by documentation to allow us to assess what the actual costs were. In some cases the prices charged appeared to be higher than

[6] We requested documentation of the technical officer's analysis of change order proposals to reach the conclusion that the costs are fair and reasonable and were told that the review is only documented when the technical officer takes exception to something. Certain change orders included in the audit sample did evidence comments by the technical officer regarding pricing issues.

what the first-tier subcontractor paid. Inconsistencies also existed between related change orders such as individual salary amounts and the percentage of a worker's time allocated between subcontracts. And, in some cases, change orders included costs that should not have been included. See Appendix III for a variety of examples that indicate a need for close Mission oversight of change order pricing.

We attribute some of the above issues to the construction manager not having the same cost orientation as a government cost analyst. Other issues may be attributed to the Mission not having been explicit about the type of support it expects for submitted costs, or the need to show a clear trail to the source documents. Still, the underlying cause seems to be insufficient Mission monitoring of change order pricing, particularly by the contracting office. The contracting office attributes its weak monitoring to insufficient staffing.

We believe that the Mission's limited monitoring of change order pricing has already led to minor cases where it paid more for some change orders than it should have (e.g., paying excessive rates for stop work claims and paying a markup for site overhead costs that should already be included in the subcontract price). However, with the recent arrival of personnel from the Army Corps of Engineers to assist the contracting office in processing its backlog of change orders, the Mission should be able to identify and resolve further instances of questionable pricing before the remaining change orders are paid.[7] In the longer term, however, it would be highly desirable to increase contracting office staffing to allow for continuous monitoring construction contracts and subcontracts and related pricing.

There are certain things the Mission could request the construction manager to do to make it easier for the Mission to monitor change order pricing. For example, early in the life of a construction contract the construction manager could be requested to obtain information that will be needed later on in assessing the prices of change orders. Some examples of the information that would be useful include the fixed unit prices the construction contractor has negotiated with its major subcontractors, and overhead and profit markups that the construction contractors will charge to change order work along with supporting documentation. Also, to facilitate the review of change orders once they are negotiated by the construction manager, the Mission could request the construction manager to fully index, with supporting detail, the final version of negotiated change orders, and maintain an organized database of local market prices which the Mission could review to assess the reasonableness of prices for items purchased locally.

Finally, we suggest that the Mission contracting office arrange with the construction manager to review the proposed pricing in advance of finalizing a change order negotiation in order to highlight whether there are any obviously questionable or unsupported items that should be addressed.

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[7] We provided copies of our workpapers to the Army Corps of Engineers personnel for their use in investigating the issues noted in the change orders that we reviewed.

We believe that these suggestions will significantly reduce the Mission's contracting staff monitoring burden. However, Mission contracting staff will still need to continuously monitor construction contracts and communicate regularly with the construction manager to assure the contracting office is aware of the details and issues on all change orders.

Management Comments and Our Evaluation

The Mission agreed with the three report recommendations and has already taken action to implement them. However, it stated that the second audit finding tends to mislead a reader into believing that the Mission paid for a mistake made by a subcontractor. The Mission stated that it did not pay for the subcontractor's mistake, and that it only paid for additional work required due to the relocation of the well. The Mission requested that the second audit finding be clarified to ensure that a reader will not be misled.

We think that the second audit finding is clear as written. The issue is not that the Mission paid for the mistake of the subcontractor—it did not. Instead, the issue concerns the Mission paying for additional work beyond what was required to fix the subcontractor's mistake. The subcontractor proposed to do this additional work at no charge if a decision was made to allow the subcontractor to fix its mistake using the least cost option of two options being considered.

The Mission asserts that it paid only for additional work required due to the relocation of the well [actually it was a water reservoir]. This is not correct. The Mission paid for more than the additional work required due to the relocation of the water reservoir. As explained in the audit finding, additional work was done to accommodate the Palestinian Water Authority's request to reroute the path of the USAID-funded pipeline around a property located below the reservoir and also to dig up and relocate an existing water line of the Bethlehem Water Service and Sewage Authority. The subcontractor agreed to fund the costs of this additional work plus certain other work at no charge in return for the favorable decision on the least cost option to fix the subcontractor's mistake.

SCOPE AND METHODOLOGY

Scope

We conducted our audit of change orders under USAID/West Bank and Gaza's construction contracts for water activities in the West Bank in accordance with generally accepted government auditing standards. We performed this audit from February through May 1999. In conducting this audit, we examined the internal controls related to the audit objective.

The audit intended to review the Mission's monitoring of water and wastewater contracts in both the West Bank and the Gaza Strip, but security considerations in the Gaza Strip prevented us from doing work there. Hence, the audit scope was revised to exclude activities in the Gaza Strip.

The audit reviewed only those contracts for construction of water works underway or completed at the time of the audit. Such activities were included in what the Mission calls its first phase water program. The second and third phases of the Mission's water program were about to start or had just begun at the time of our audit, but since no water works construction had begun no activities from the second or third phase water programs are included in the audit scope.

The audit scope also did not include construction activities unrelated to water, e.g., road construction activities not part of a water activity, change orders or contract modifications related to the design phase of the Mission's contract for water activities in the West Bank, or other work not specifically related to the construction of water works.

The audit scope was further limited to reviewing only change orders from construction subcontractors rather than those submitted for the construction manager or the prime contractor.

Appendix IV details the contractual hierarchy for the Mission's first phase water program in the West Bank.[8] All the contract activities flowed from a prime contract awarded to Camp Dresser and

[8] The first phase water program in the West Bank also included grant-funded activities implemented by the United Nations Development Program and certain private voluntary organizations. These activities were excluded from the audit scope.

McKee International, Inc. (CDM) in June 1996. As of our audit cutoff date, March 29, 1999, the CDM contract had been amended 17 times raising its value to $71.7 million. The construction subcontracts for water activities awarded under this $71.7 million amounted to about $50.6 million inclusive of value-added taxes but exclusive of other change orders.

As of March 29, 1999, except for four change orders relating to the reimbursement of value-added taxes,[9] the construction manager had logged a total of 66 change orders which were in various stages of processing (including 5 valued at $119,493 already approved by the Mission). Only 56 of these 66 change orders had estimates of the change order cost, with the estimated cost being $6.2 million.

We performed the audit at USAID/West Bank and Gaza in Tel Aviv, Israel, and at the offices of the construction manager and the three first-tier construction subcontractors in the Hebron-Bethlehem area. We interviewed personnel and reviewed change order files at the Mission, the construction manager, and at first-tier construction subcontractors in the Hebron-Bethlehem area. We also visited construction sites in the Hebron-Bethlehem and Jenin areas. However, due to the logistics involved and time constraints, we did not interview personnel or review files at the fourth first-tier construction subcontractor located in the Jenin area. Further, we did not visit any second- or lower-tier construction subcontractors in either the Hebron-Bethlehem or Jenin areas.

Methodology

To determine whether USAID/West Bank and Gaza monitored water construction contracts in the West Bank for reasonable assurance that the change orders were necessary and reasonably priced, as of our March 29, 1999 audit cutoff date, we judgmentally sampled change orders logged by the construction manager for the four first-tier construction subcontractors.

Our sample consisted of 29 change orders logged for the three first-tier construction subcontractors in the Hebron-Bethlehem area and one from the subcontractor in the Jenin area. This latter change order was selected to review its consistency with a related change order submitted by one of the subcontractors in the Hebron-Bethlehem area.

For each change order we assessed whether the construction manager:

- Critically assessed whose responsibility it was to pay for the work.

[9] The Mission approved a change order for each of the four construction subcontractors (total value about $3.5 million) to reimburse them for value-added taxes they were required to pay to the Israeli and Palestinian authorities. For purposes of discussion we exclude them from the change order count because they did not involve construction changes per se, but only a funding mechanism to reimburse taxes.

- Verified the number of work units required for the change order.
- Verified the reasonableness of proposed unit prices.
- Verified that the first-tier construction subcontractor actually incurred the specified additional costs.
- Offset the cost of change work with the cost of the contracted work avoided as a result of the change order.
- Obtained evidence of the times work stoppages started and ended.
- Evaluated the reasonableness of claimed slippage against the critical path, in cases of overall subcontract schedule delays.
- Obtained approval of the Mission's technical office and contracting officer *before* directing the subcontractor to proceed on discretionary additions to the subcontract scope.

In assessing whether change orders were necessary, we applied the very liberal criteria that if the Mission requested change order work, it was necessary. Thus we did not question change orders which added additional features or higher specifications to the water works though technically some of those may not have been necessary. Nor did we question the necessity of certain additional works that did not add anything to the water works, but which the Mission may have approved for other reasons, such as gaining cooperation from municipalities through which the water works needed to pass.

In identifying instances of questionable pricing we were guided by the general contract cost principles and procedures specified in FAR, Part 31. However, due to the limited time available for the audit, we stopped our review at the point of identifying instances of questionable pricing and did not do the additional work to reach a final conclusion on whether the costs should be allowed or at what amount.

As a materially threshold, we considered that an error rate of five percent or less indicated that the Mission adequately monitored the attribute in question; an error rate between 5 and 10 percent indicated that the Mission's monitoring was a "qualified satisfactory" with significant exceptions; and an error rate of greater than 10 percent (i.e., more than 10 percent of the sample items contained errors) indicated that the Mission's monitoring was not satisfactory.

United States Agency for International Development
West Bank and Gaza Mission

To: Darryl T. Burris, RIG/A/C

From: William Hammink, Acting Mission Director, USAID/West Bank:Gaza

Subject: Draft report titled; "Audit of Change Orders under USAID/West Bank and Gaza's Construction Contracts for Water Activities in the West Bank."

Date: November 15, 1999

We would like to thank the auditors for the cooperation they demonstrated during this difficult audit. We implemented all the recommendations and believe that they will improve the management of the existing contracts. Moreover, this audit has endorsed management's decision to change contract modalities to eliminate potential conflicts of interest.

Recommendation # 1:

We recommend that USAID/West Bank and Gaza, for the next round of construction under its water program, make clear to the construction managers and construction contractors involved that USAID will not pay for additional work unless the contracting officer requests the work in advance.

Mission Response:

We agree with this recommendation. We sent the following letter (see attachment 1) to all our construction and construction management contractors informing them that USAID shall not pay for work performed without the contracting officer's prior approval. Based on this, we request that this recommendation be closed upon report issuance.

Tel Aviv: American Embassy
71 Hayarkon St.

Jerusalem: American Consulate General
P.O. Box 290

Recommendation # 2:

We recommend that USAID/West Bank and Gaza, for the next round of construction contracts under its water program, require construction managers to document in change order negotiation memorandums the specific contractual basis for why the construction manager considers the submitted change order costs are USAID's responsibility versus the responsibility of the involved contractors or other parties.

Mission Response:

We agree with this recommendation, and incorporated the essence of his recommendation in the attached letter sent to all USAID construction management contractors. We believe this addresses the issue raised, and accordingly request that the recommendation be closed upon report issuance.

Recommendation # 3:

We recommend that USAID/West Bank and Gaza, for construction contracts under its second and third phase water program, develop and implement an improved system for monitoring change order pricing. At a minimum, the improved system should consider:

(A) Assigning contracting office staff on a continuing basis to monitor construction contracts/subcontracts, their associated change orders, and construction managers' procedures for negotiating change order prices.

(B) Requiring construction managers to obtain, at the beginning of the contracts/subcontracts, basic information and supporting documentation needed for subsequent evaluation of the reasonableness of change order pricing (such information would include the fixed unit prices negotiated by the construction contractor for subcontracted work, and compensation levels by individual core staff, actual equipment costs, and overhead costs, for the construction contractor and its major subcontractors).

(C) Requiring construction managers to: (i) fully index, with the supporting detail attached, the final version of negotiated change orders, (ii) obtain evidence from the construction subcontractors of the amounts negotiated or paid to lower tier subcontractors for work done on individual change orders, and (iii) maintain an organized databases of local market prices that the Mission can check against to assess the reasonableness of unit prices.

Mission Response:

We agree with this recommendation. As stated before, we restructured our contracting procedures in line with Part 36 of the FAR to improve construction contract management. Under this new modality, the construction management contractor will clearly be a USAID agent. They will not have any contractual relationship with the construction contractors. Accordingly, we will be able to place greater reliance on their work. While we believe this process will address many of the issues raised in the audit in the future, we implemented the following to mitigate the risks inherent in the existing contracts:

(a) We assigned the Senior Contracts Specialist to monitor the 3rd and 4th phase construction contracts under implementation at present. In this capacity, the specialist attends all meetings where change orders and/or pricing issues are discussed.

(b) We sent the attached letter (see attachment 1) to all our construction/ construction management contractors. This letter establishes the basic information they need to submit in order to process a change order. In addition, it asks them to establish data bases necessary to manage this function more effectively.

(c) We purchased pricing manuals and are creating a database at the Mission to facilitate future pricing reviews. We have also decided to hire a FSN employee to oversee pricing issues of all construction activities.

We request that this recommendation be closed upon report issuance.

We also offer the following comments with respect to the body of the report.

Executive Summary, Page 1, Paragraph 4: Concludes by stating: "Although we briefed the contracting officer on this resubmitted change order, he subsequently approved it, apparently under the premise that the work was "tacitly endorsed" by the Mission and therefore the Mission was obligated to pay."

The discussion contained in the report that precedes the above statement may be factual. However, it had no direct bearing on what was "tacitly endorsed" by the Mission, and on the contracting officer's decision to approve the change order. USAID paid only for additional work required due to the relocation of the well. The paragraph as presently formulated tends to mislead a reader into believing that the Mission paid for a mistake made by the subcontractor. USAID did not pay for the subcontractor's mistakes. We

believe that this section should be modified to provide proper context, to set the record straight and to ensure that a reader will not be misled. The facts as stated in the negotiation memorandum provided to the auditors are as follows. The original site was sold to a developer and an alternate site selected to build the Bethlehem Reservoir. At the request of the Palestinian Water Authority, an existing 10-inch water distribution line was removed and co-located in the new distribution line at the alternate site. The construction management contractor directed this work that was known by the USAID project manager. These actions resulted in additional work such as: horizontal realignment of the reservoir to accommodate the new site, and 380 meters of additional trenching, piping and roadwork. The contractor submitted a final estimate of $ 90,000, which was settled by the contracting officer for $ 86,063. The construction contractor over-excavated the reservoir by two meters necessitating additional re-alignment. As stated above, these costs resulted from the contractor's mistake. They are the contractor's responsibility, and accordingly, USAID did not pay these costs.

Page 6 Paragraph 1: This paragraph contains almost identical language to that contained in the Executive Summary section identified above. It should also be modified to ensure that a reader would not be misled.

United States Agency for International Development
West Bank and Gaza Mission

Attachement No. 1

To whom it may concern

Dear Sir;

Ref.: (Note: Individual Letter sent to each Construction Contractor at USAID/ West Bank / Gaza)

A recent audit identified the following weaknesses that I believe must be addressed to improve the management of all construction and construction management contracts. While I have discussed these issues at many meetings, I think it best that we have a written record.

Change Orders:

- ***Authorization:*** *I must authorize all additional work that may lead to increased costs, in advance and preferably in writing, before work begins. Any costs incurred without my prior authorization shall not be considered for funding at a latter time. In this regard, I would like to reiterate that USAID project managers or personnel of host institutions with which you work are not authorized to approve additional work that may result in increased costs.*

- ***Documentation:*** *I ask that a negotiation memo from the construction management contractor be attached to all change order requests. These change orders must address the following issues:*

  - *Why should USAID bear the cost of this change order? You must clearly establish why, in your opinion, the change order is USAID's responsibility as opposed to that of a third party, including the construction contractor.*
  - *The change order request must include adequate supporting detail that is appropriately indexed in order to facilitate review. The supporting detail should include evidentiary matter from the construction contractors of amounts negotiated or paid to subcontractors for work done on the change order, and reference to the database or documents referred to, in ascertaining the reasonableness of unit and other prices.*

Tel Aviv: American Embassy
71 Hayarkon St.
Tel. 972-3-5114848

Jerusalem: American Consulate General
P.O. Box 290
Tel. 972-2-6227230

Management:

As you know, it is important that all change orders are made definite as soon as a change is authorized. In order to facilitate this process, I ask you to obtain the following types of information for construction contractors and subcontractors as soon as the contracts are awarded.

- *Negotiated fixed unit prices.*
- *Compensation levels of key staff.*
- *Cost of equipment used in construction.*
- *Overhead costs.*
- *Database of local market prices for construction materials.*
- *Other relevant costs.*

Sincerely,

Timothy T. Beans
Contracting Officer

Examples of Pricing Questions/Issues

FAR, Part 31, provides contract cost principles and procedures applicable to the change orders reviewed by this audit. Part 31 provides that costs shall be allowable to the extent they are reasonable, allocable, and determined to be allowable under the applicable subparts of Part 31. In ascertaining what constitutes a cost, any generally accepted method of determining or estimating costs that is equitable and is consistently applied may be used. Part 31 states that *a cost is reasonable if, in its nature and amount, it does not exceed that which would be incurred by a prudent person in the conduct of a competitive business.*

Part 31 also states that a contractor is responsible for accounting for costs appropriately and for maintaining records, including supporting documentation, adequate to demonstrate that costs claimed have been incurred, are allocable to the contract, and comply with applicable cost principles in Part 31 and agency supplements. The contracting officer may disallow all or part of a claimed cost that is inadequately supported

Based upon the above explanation of the general criteria that apply, the following are some examples of questionable pricing noted during the audit.

- Subcontractors did not support overhead and profit markups with financial information showing their actual overhead and profit margins in pricing change orders. Based on the criteria cited above, a contractor is responsible for maintaining documentation to support claimed costs and the contracting officer may disallow costs inadequately supported.

- Most of the first-tier subcontractors separately identified the percentage amount added to their change orders for site overhead. Site overhead costs are in-country overhead costs charged to the subcontract. Site overhead costs include personnel and office expenses that are basically fixed costs during the base contract period and therefore already included in the base subcontract cost. Site overhead costs should not be allowed for change order work during the base subcontract period unless subcontractors can support that they incurred incremental costs beyond the costs provided for under the base subcontract.

  Further, all the subcontractors have proposed change orders to cover their site overhead expenses during extended subcontract periods, the extensions being for reasons that were not the subcontractors' responsibilities. If the Mission approves change orders for overhead expenses during contract extensions, then change orders during the contract extension periods should be similarly reviewed to assure that site overhead expenses being claimed are actually incremental to what is already being allowed for under the change orders extending the subcontract periods.

- As noted previously, contract cost principles require contractors to maintain accounting records that adequately demonstrate that costs claimed have been incurred. When we visited one of the subcontractors, however, we were not able to verify that the subcontractor paid the direct costs claimed for certain change order work already completed. Before the Mission approves a change order for work already completed, it should establish what the first-tier subcontractor actually paid to assure that the Mission is paying for real incurred costs rather than just an added profit for the subcontractor. If the subcontractor cannot support claimed costs, then the contracting officer can decide to disallow all or part of the costs.

- For certain change orders we could not trace file documentation to determine the basis for some or most of the unit costs. Before the Mission approves a change order, it needs to verify the source information to assure that unit prices are supported and reasonable.

- For certain short-term stop work claims change order prices were not based on actual costs. For instance, a memo from a second-tier subcontractor involved a work stoppage asked to be paid for idled personnel as follows:

  - $95 per day for a project manager
  - $50 per day for one engineer
  - $35 per day each for of two foremen, and
  - $21 per day for each of 12 laborers.

  However, the change order submitted to USAID allowed:

  - $350 per day for one engineer
  - $225 per day for one foreman, and
  - $60 per day for each of 8 laborers.

  The submitted change order also included higher prices than requested for certain equipment as well as additional equipment beyond what was requested in the memo. This is another example of the need to determine what the first-tier subcontractor actually paid for change order work, as well as an example of the need to assess whether prices charged are reasonable. The first-tier subcontractor in this example submitted much higher labor rates (several multiples higher) for its change orders for short-term work stoppage claims than it requested in another change order for schedule delay on the overall subcontract.

- One change order, as initially submitted to the construction manager, represented that excavation had been done in one location and due to the difficulty of that location the second-tier subcontractor had insisted upon charging premium prices. However, the change order file indicated that the excavation done at that site had been misrepresented (overstated), apparently so that the second-tier subcontractor could charge for work previously done at two

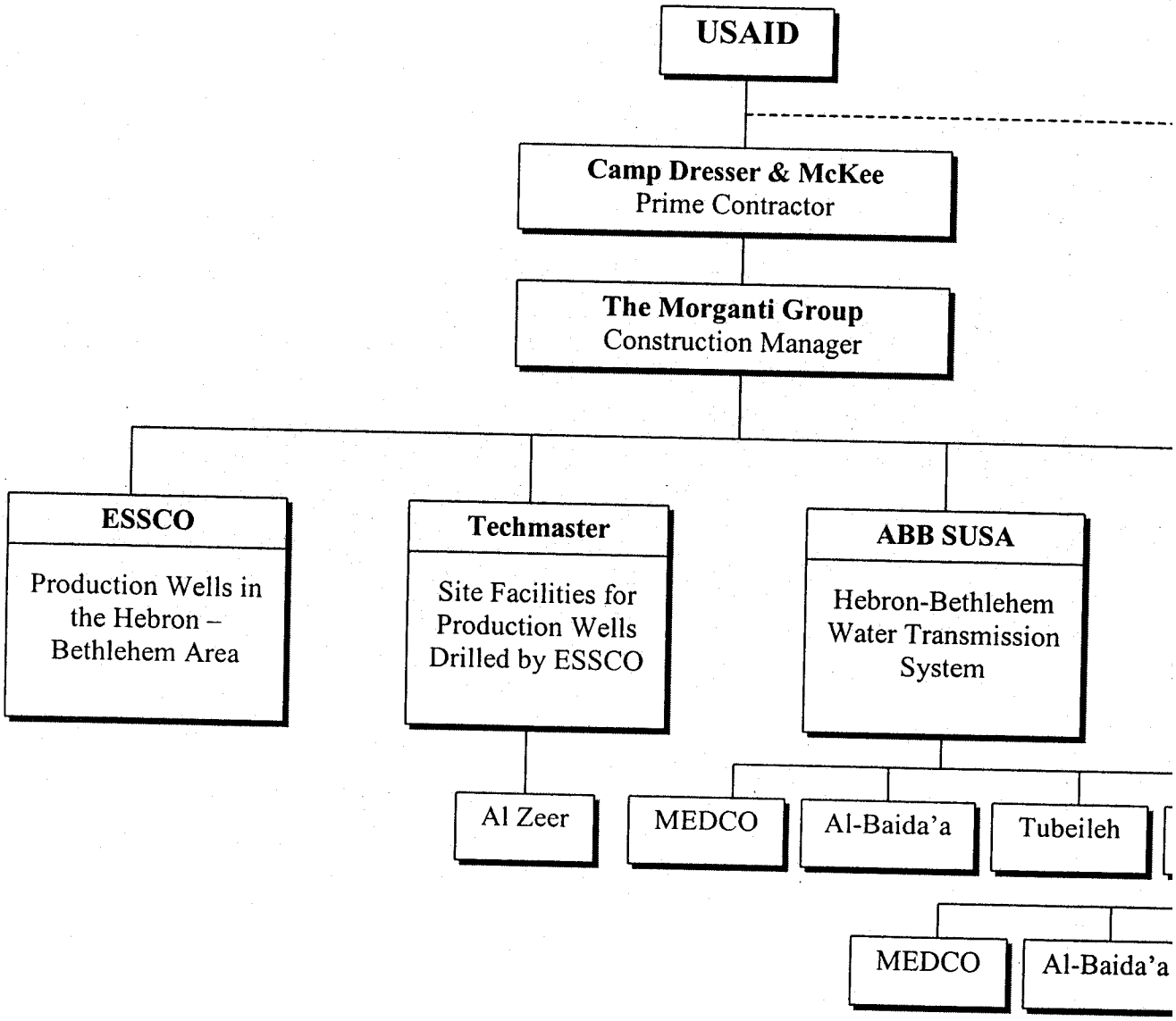
other locations. However, the premium pricing might not be justified for the other two locations.

- All the first-tier subcontractors requested "extended overheads", that is, overhead costs for additional days needed to complete their contracts, due to delays for which they were not responsible. Further, the first-tier subcontractors also requested extended overheads for their major second-tier subcontractors. Review of these change orders showed that, for the most part, the costs included in the extended overhead submissions lacked supporting documentation. Furthermore, some requested salary levels seemed unreasonably high, and there were inconsistent allocations for time spent between subcontracts (see explanation below). Given the characteristics of the information submitted by the first- and second-tier subcontractors for their extended overhead submissions, it would be highly desirable for the Mission to verify their veracity by visiting the subcontractors involved.

  An example of what appeared to be an unreasonably high salary level was one second-tier subcontractor person, likely the owner of the business, with a submitted salary level of $10,000 per month. Information on this person was inconsistent as well. Under one extended overhead submission this person's salary was listed at $10,000 per month, but under another extended overhead submission from a different first-tier subcontractor, the person's salary was shown as $5,000 per month. Another example of inconsistent information under two extended overhead submissions was certain employees charging more than 100 percent of their time between two subcontracts during overlapping extension periods. Other employees were allocated between the subcontracts at no more than 100 percent of their time. However, the construction manager has not yet obtained evidence of the second-tier subcontractors' business bases (i.e., their non-USAID business) and, until it does, it will not be in a position to analyze whether the allocation of labor costs is accurate.

- Further, with regard to "extended overheads" one first-tier subcontractor included the overheads of four of its second-tier subcontractors for the whole period of the requested extension. However, the change order proposal did not include analyses justifying the extension periods of the second-tier subcontractors, and at least two of them did not appear to have been delayed for reasons beyond their responsibility for the number of extension days requested.

- One first-tier subcontractor was delayed on the front end of the subcontract by 198 days. Among other things, its change order proposal included the cost of idled equipment of its second-tier subcontractor at a rate of $36,000 per month. Before such a figure is accepted it should be established that the second-tier contractor actually incurred those costs and that the costs are fully chargeable to the first-tier subcontract. This is an issue of supporting documentation for claimed cost. Furthermore, FAR, Part 31 provides specific guidance regarding construction equipment and states that actual cost data shall be used when such data can be determined from the contractor's accounting records.

- The construction manager usually accepted the first-tier subcontractors' "schedule of values" (i.e., the fixed priced subcontract amounts assigned to work segments) as the basis for the unit prices of similar work done under change orders. This was fine except that the first-tier subcontractors' schedule of values already included overhead and profit assigned to those work segments. Also, the rates were not uniform across all work segments. For example, we noted overhead and profit mark ups of 24 and 37 percent applied to different work segments. A better approach would have been to use the schedule of values of the *second*-tier subcontractors, since it was these companies that usually actually performed the work. Then the overhead and profit mark ups for the first-tier subcontractor would have to be separately justified and supported.

Contractual Hierarchy for West Bank Water Contract and Subco
First Phase Water Program